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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/665,920	09/20/2000	Belgacem Haba	RB1-008US	8524

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EXAMINER

PHAN, THANH S

ART UNIT	PAPER NUMBER
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2841

DATE MAILED: 12/06/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/665,920

Applicant(s)

HABA ET AL.

Examiner

Thanh S Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
if approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other:

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Wen (U.S Pat # 5,943,573).

**Regarding claim 1.** Wen discloses an apparatus (Figure 4D) comprising:

a substrate (reference 40) having a first elongated edge and a second elongated edge, wherein the elongated edges are opposite one another; a plurality of channels (references 43a, 43b) extending from the first elongated edge to the second elongated edge, a plurality of memory devices disposed on the substrate; and wherein each of the plurality of memory devices is coupled to one of the plurality of channels (Column 1, lines 36-44).

**Regarding claim 4.** Wen discloses an apparatus as recited in claim 1 and further discloses wherein each channel includes a plurality of conductors, the plurality of conductors following a substantially linear path across the substrate (Column 5, line 55).

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**Regarding claim 5.** Wen discloses an apparatus as recited in claim 1 wherein each channel includes a plurality of conductors, the plurality of conductors having lengths that are approximately equal (Figure 4d).

**Regarding claim 6.** An apparatus as recited in claim 1 wherein the substrate includes a plurality of electrical contacts along the first and second elongated edges (Figure 4d, edge portions of channels).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3, are rejected under 35 U.S.C. 103(a) as being unpatentable over Wen (U.S Pat # 5,943,573).

**Regarding claim 2.** Wen discloses an apparatus as recited in claim 1 wherein the substrate has a first side and a second side except for the plurality of memory devices being disposed on both sides of the substrate. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to disposed the plurality of

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memory devices on both side of the substrate, since it was known in the art that usage of both sides of the substrate will result in a reduction of substrates used.

**Regarding claim 3.** Wen discloses an apparatus as recited in claim 1 wherein the substrate has a first side and a second side except for the plurality of channels extending across both sides of the substrate. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have the plurality of channels extending across both sides of the substrate, since it was know in the art that duplication of working parts on one side of the substrate to the second will result in a reduction of substrates used.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holman et al (U.S Pat # 6,005,776) in view of Wen (U.S Pat # 5,943,573).

**Regarding claim 7.** Holman et al. discloses an apparatus comprising:

a first substrate having a plurality of memory devices disposed thereon, and a second substrate having a plurality of memory devices disposed thereon; and a first connector

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configured to couple the first channel portion to the second to channel portion, wherein the first connector includes a first slot that receives an edge of the first substrate and a second slot that receives an edge of the second substrate (Column 5, lines 7-16), but does not disclose a channel portion extending across the substrates. Wen teaches a substrate with a channel portion extending across the substrates. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Holman et al.'s with Wen's teachings to reduced breakdown voltage of the ROM device.

**Regarding claim 8.** Holman et al. and Wen disclose an apparatus as recited in claim 7.

Holman et al. further discloses wherein the coupling of the first channel portion to the second channel portion through the connector forms a channel (Column 5, lines 7-16).

**Regarding claims 9 and 10.** Holman et al. and Wen disclose an apparatus as recited in claim 7. Wen further discloses wherein the channel portion extends from a first elongated edge of the substrate to a second elongated edge of the substrate (Figure 4d).

**Regarding claims 11 and 12.** Holman et al. and Wen disclose an apparatus as recited in claim 7. Wen further discloses wherein the channel portion includes a plurality of conductors following a substantially linear path across the substrate (Column 5, line 55).

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**Regarding claims 13 and 14.** Holman et al. and Wen disclose an apparatus as recited in claim 7. Wen further discloses wherein the channel portion includes a plurality of conductors having lengths that are approximately equal (Figure 4d).

**Regarding claim 15.** Holman et al. and Wen disclose an apparatus as recited in claim 7. Holman et al. further discloses a third substrate coupled to the first connector (Column 5, lines 8-9).

**Regarding claim 16.** Holman et al. and Wen disclose an apparatus as recited in claim 15. Wen further teaches a channel portion extending across the substrate (Figure 4d).

**Regarding claim 17.** Holman et al. and Wen disclose an apparatus as recited in claim 15 except for wherein the third substrate includes a third channel portion extending across the third substrate, the third channel portion including a plurality of conductors following a substantially linear path across the third substrate. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include a third channel portion extending across the third substrate, the third channel portion including a plurality of conductors following a substantially linear path across the third substrate, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art.

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**Regarding claim 18.** Holman et al. and Wen disclose an apparatus as recited in claim 15. Wen further teaches wherein the substrate includes a channel portion extending across the substrate, the channel portion including a plurality of conductors having lengths that are approximately equal (Figure 4d).

**Regarding claim 19.** Holman et al. and Wen disclose an apparatus as recited in claim 7 except for a second connector having a first slot that receives an edge of the first substrate and a second slot that receives an edge of the second substrate, wherein the edges received by the second connector are on the opposite side of the substrates from the edges received by the first connector. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a second connector having a first slot that receives an edge of the first substrate and a second slot that receives an edge of the second substrate, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ8.

**Regarding claim 20.** Holman et al. and Wen disclose an apparatus as recited in claim 19. Holman et al. further discloses wherein the connector is coupled to a motherboard (reference 610).

**Regarding claims 21-23.** Holman et al. and Wen disclose the limitations of the invention. See above claims.



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**Regarding claims 24-30.** The methods steps are inherent since the limitations of the apparatus is disclosed.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yamaguchi (U.S Pat # 5,952,691) discloses a Non-Volatile Electrically Alterable Semiconductor Memory Device.

Yiu (U.S Pat # 5,117,389) discloses a Flat-Cell Read-Only Memory Integrated Circuit.

Bell (U.S Pat # 5,379,438) discloses a Transferring A Processing Units Data Between Substrates In A Parallel Processor.

Yoon et al. (U.S Pat # 6,233,157) discloses a Printed Circuit Board And Method For Wiring Signal Lines On The Same.

### **Contacts information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh S Phan whose telephone number is 703-305-0069. The examiner can normally be reached on M-F 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on 703-308-3301. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7722 for regular communications and 703-305-7722 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

TSP

December 2, 2001

A handwritten signature in black ink, appearing to read "J N Gandhi", with a horizontal line drawn underneath the name.

**Jayprakash N. Gandhi**  
**Primary Examiner**  
**Technology Center 2800**